MAY 28 2002
PATENT & TRADEMARK OFFICE
C29

SEQUENCE LISTING

<110> Emil M. Orozco, Jr.
Zude Weng
Wesley B. Bruce
Rebecca E. Cahoon
Yong Tao

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35 40 45

Pro Ala Ile Ile Ala Arg Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu
50 55 60

Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Arg
65 70 75 80

Ile Ile Ala Cys Gly Asn Lys Leu Ala Ala Ile Ala Met Gly Val Arg
85 90 95

Phe Val Ala Gly Pro Ala Val Met Ala Ala Ala Ser Ile Ala Val Gly
100 105 110

Leu Arg Gly Val Leu Leu His Ile Ala Ile Val Gln Ala Ala Leu Pro
115 120 125

Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Gly Val His Pro
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35 40 45

Ile Gly Val Ile Trp Ser Leu Val Cys Phe Arg Trp Asn Phe Gln Met
50 55 60

Pro Ala Ile Val Leu Gln Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu
65 70 75 80

Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Arg
85 90 95

Ile Ile Ala Cys Gly Asn Lys Val Ala Thr Phe Ala Met Ala Val Arg
100 105 110

Phe Leu Thr Gly Pro Ala Val Met Ala Ala Ala Ser Phe Ala Val Gly
115 120 125

Leu Arg Gly Thr Leu Leu His Val Ala Ile Val Gln Ala Ala Leu Pro
130 135 140

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Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Val His Pro
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tcgatcggca agatgatcac cggcacggan cttctaccac gtcntgacgg ccatggtgcc 180
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35 40 45

Phe Xaa Val Pro Leu Leu Ser Phe His Phe Ile Ser Xaa Gln Gln Pro
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35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
50 55 60

Tyr Thr Met Asn Leu Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Leu
65 70 75 80

Met Val Leu Ala Met Leu Thr Ala Trp Ser His Leu Ser Arg Arg Gly
85 90 95

Ser Leu Glu Trp Thr Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
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Thr Leu Val Met Gly Ile Pro Leu Leu Lys Gly Met Tyr Gly Asp Phe
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Ser Gly Ser Leu Met Val Gln Ile Val Val Leu Gln Cys Ile Ile Trp
130 135 140

Tyr Thr Leu Met Leu Phe Met Phe Glu Tyr Arg Gly Ala Arg Met Leu
145 150 155 160

Ile Thr Glu Gln Phe Pro Asp Asn Ala Gly Ala Ile Ala Ser Ile Val
165 170 175

Val Asp Pro Asp Val Val Ser Leu Asp Gly Arg Arg Asp Ala Ile Glu
180 185 190

Thr Glu Ala Glu Val Lys Glu Asp Gly Arg Ile His Val Thr Val Arg
195 200 205

Arg Ser Asn Ala Ser Arg Ser Asp Ile Tyr Ser Arg Arg Ser Met Gly
210 215 220

Phe Ser Ser Thr Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile
225 230 235 240

Tyr Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe
245 250 255

Asn His Asn Asp Phe Tyr Ser Met Val Gly Arg Ser Ser Asn Phe Gly
260 265 270

Ala Ala Asp Ala Phe Gly Ile Arg Thr Gly Ala Thr Pro Arg Pro Ser
275 280 285

Asn Tyr Glu Asp Asp Ala Ser Lys Pro Lys Tyr Pro Leu Pro Val Val
290 295 300

Asn Ala Thr Ser Gly Ala Gly Ala Ala His Tyr Pro Ala Pro Asn Pro
305 310 315 320

Ala Val Ala Ala Ala Pro Lys Gly Ala Arg Lys Ala Ala Thr Asn Gly
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Xaa Xaa Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45

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Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
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Phe Ala Met Asn Leu Arg Phe Leu Ala Val Asp Thr Leu Gln Lys Val
65   70   75   80

Ala Val Leu Ala Leu Leu Ala Leu Xaa Ser Xaa Ala Ala Ser Ser Xaa
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Arg Xaa Arg Ser Gly Leu Asp Trp Ser Ile Lys Leu Xaa Xaa Leu Ser
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Thr Leu

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<212> DNA
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catcgcatgg tttcatcact tgccatagtt aacgggaaaa aaaagcagaa gcaatcgatg 1920
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gggtttctag actgattaaa ggattccaaa tagcatctct ggattcgatt tctttcgcag 2700
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aaaaaaaag 2769

<210> 14
<211> 573
<212> PRT
<213> Zea mays

<400> 14
Met Ile Thr Ala Leu Asp Leu Tyr His Val Leu Thr Ala Val Val Pro
1 5 10 15

Leu Tyr Val Ala Met Thr Leu Ala Tyr Gly Ser Val Arg Trp Trp Arg
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
50 55 60

Phe Ala Met Asn Leu Arg Phe Leu Ala Ala Asp Thr Leu Gln Lys Val
65 70 75 80

Ala Val Leu Ala Leu Leu Ala Leu Ala Ser Arg Gly Leu Ser Ser Pro
85 90 95

Arg Ala Leu Gly Leu Asp Trp Ser Ile Thr Leu Phe Ser Leu Ser Thr
100 105 110

Leu Pro Asn Thr Leu Val Met Gly Ile Pro Leu Leu Arg Gly Met Tyr
115 120 125

Gly Ala Ser Ser Ala Gly Thr Leu Met Val Gln Val Val Val Leu Gln
130 135 140

Cys Ile Ile Trp Tyr Thr Leu Met Leu Phe Leu Phe Glu Tyr Arg Ala
145 150 155 160

Ala Arg Ala Leu Val Leu Asp Gln Phe Pro Asp Gly Ala Ala Ala Ser
165 170 175

Ile Val Ser Phe Arg Val Asp Ser Asp Val Val Ser Leu Ala Arg Gly
180 185 190

Asp Val Glu Leu Glu Ala Glu Pro Asp Gly Val Ala Gly Ala Gly Ala
195 200 205

Val Ser Ser Arg Gly Gly Asp Ala Gly Arg Val Arg Val Thr Val Arg
210 215 220

Lys Ser Thr Ser Ser Arg Ser Glu Ala Ala Cys Ser His Ser His Ser
225 230 235 240

Gln Thr Met Gln Pro Arg Val Ser Asn Leu Ser Gly Val Glu Ile Tyr
245 250 255

Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe Asn
260 265 270

His Ala Asp Phe Phe Asn Ile Val Gly Ala Ala Ala Lys Gly Gly Gly
275 280 285

Gly Ala Ala Gly Asp Glu Glu Lys Gly Ala Cys Gly Gly Gly Gly Gly
290 295 300

Gly His Ser Pro Gln Pro Gln Ala Val Ala Val Pro Ala Lys Arg Lys
305 310 315 320

Asp Leu His Met Leu Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu
325 330 335

Arg Ala Ala Val His Val Phe Gly Ala Gly Gly Ala Asp His Ala Asp
340 345 350

Val Leu Ala Lys Gly Ala Gln Ala Tyr Asp Glu Tyr Gly Arg Asp Asp
355 360 365

Tyr Ser Ser Arg Thr Lys Asn Gly Ser Gly Gly Ala Asp Lys Gly Gly
370 375 380

Pro Thr Leu Ser Lys Leu Gly Ser Asn Ser Thr Ala Gln Leu Tyr Pro
385 390 395 400

Lys Asp Asp Gly Glu Gly Arg Ala Ala Ala Val Ala Met Pro Pro Ala
405 410 415

Ser Val Met Thr Arg Leu Ile Leu Ile Met Val Trp Arg Lys Leu Ile
420 425 430

Arg Asn Pro Asn Thr Tyr Ser Ser Leu Ile Gly Val Val Trp Ser Leu
435 440 445

Val Ser Tyr Arg Trp Gly Ile Glu Met Pro Ala Ile Ile Ala Arg Ser
450 455 460

Ile Ser Ile Leu Ser Asp Ala Gly Leu Gly Met Ala Met Phe Ser Leu
465 470 475 480

Gly Leu Phe Met Ala Leu Gln Pro Arg Ile Ile Ala Cys Gly Asn Lys
485 490 495

Leu Ala Ala Ile Ala Met Gly Val Arg Phe Val Ala Gly Pro Ala Val
500 505 510

Met Ala Ala Ala Ser Ile Ala Val Gly Leu Arg Gly Val Leu Leu His
515 520 525

Ile Ala Ile Val Gln Ala Ala Leu Pro Gln Gly Ile Val Pro Phe Val
530 535 540

Phe Ala Lys Glu Tyr Gly Val His Pro Asp Ile Leu Ser Thr Ala Tyr
545 550 555 560

Gly Pro Ile Thr Ser His Gly Phe Ile Thr Cys His Ser
565 570

<210> 15
<211> 543
<212> DNA
<213> Oryza sativa

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<222> (42)
<223> n=a,c,g or t

<220>
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<222> (374)
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<220>
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<220>
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<222> (530)
<223> n=a,c,g or t

<220>
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<222> (535)
<223> n=a,c,g or t

<220>
<221> unsure
<222> (543)
<223> n=a,c,g or t

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tgtacgccag cgttctcggc gtcgtgtggg cgtgcatcgc gtacaggtgg cacctgagct 180
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ccgccgccct cggnctccgc ggcgacgtcc tgcacctcgc catcatacag gncgnactgc 420
tcaatcgatt nttcttcgtt ttncaaagga gtatggctta ttncgatgac tcagnacggc 480
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atn 543

<210> 16
<211> 110
<212> PRT
<213> Oryza sativa

<220>
<221> UNSURE
<222> (108)..(109)
<223> Xaa = ANY AMINO ACID

<400> 16
Val Gly Leu Lys Leu Ala Arg Asn Pro Asn Val Tyr Ala Ser Val Leu
1 5 10 15

Gly Val Val Trp Ala Cys Ile Ala Tyr Arg Trp His Leu Ser Leu Pro
20 25 30

Gly Ile Val Thr Gly Ser Leu Gln Val Met Ser Arg Thr Gly Thr Gly
35 40 45

Met Ser Met Phe Ser Met Gly Leu Phe Met Gly Gln Gln Glu Arg Val
50 55 60

Ile Ala Cys Gly Ala Gly Leu Thr Ala Leu Gly Met Ala Leu Arg Phe
65 70 75 80

Val Ala Gly Pro Leu Ala Thr Leu Val Gly Ala Ala Ala Leu Gly Leu
85 90 95

Arg Gly Asp Val Leu His Leu Ala Ile Ile Gln Xaa Xaa Leu
100 105 110

<210> 17
<211> 330
<212> DNA
<213> Oryza sativa

<400> 17
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acacggtgat ggcggcggtg gtgccgctgt acgtggcgat gttcctggcg tacgggtcgg 180
tgcggtggtg ggcatcttc acgccggacc agtgctccgg catcaaccgc ttcgtcgcca 240
tcttcgccgt gccgctcctg tccttccact tcatctccac caacgacccg tacgccatga 300
acctccgctt cctggcggcg ggacacgctg 330

<210> 18
<211> 74
<212> PRT
<213> Oryza sativa

<400> 18
Met Ile Ser Gly His Asp Phe Tyr Thr Val Met Ala Ala Val Val Pro
1 5 10 15

Leu Tyr Val Ala Met Phe Leu Ala Tyr Gly Ser Val Arg Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Ile
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
50 55 60

Tyr Ala Met Asn Leu Arg Phe Leu Ala Ala
65 70

<210> 19
<211> 2162
<212> DNA
<213> Oryza sativa

<400> 19
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acacggtgat ggcggcggtg gtgccgctgt acgtggcgat gttcctggcg tacgggtcgg 180
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tcttcgccgt gccgctcctg tccttccact tcatctccac caacgacccg tacgccatga 300
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cggtgcgcgg ctcgagcttc ggcgcctccg agctttactc gctgcaatcg tcgcggggcc 960
caaccccgag gcagtccaac ttcgacgagc actcggcacg gccgccgaaa ccaccggcaa 1020
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gcgacatttg tacaagagat aacgacagaa tgtactcaaa tataaccgat attagatatg 2100
tgttctgtta aagatctcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2160
aa 2162

<210> 20
<211> 589
<212> PRT
<213> Oryza sativa

<400> 20
Met Ile Ser Gly His Asp Phe Tyr Thr Val Met Ala Ala Val Val Pro
1 5 10 15

Leu Tyr Val Ala Met Phe Leu Ala Tyr Gly Ser Val Arg Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Ile
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
50 55 60

Tyr Ala Met Asn Leu Arg Phe Leu Ala Ala Asp Thr Leu Gln Lys Leu
65 70 75 80

Leu Val Leu Ala Gly Leu Ala Ala Trp Ser Arg Leu Pro Ser Arg Thr
85 90 95

Gly Ala Pro Arg Leu Asp Trp Ser Ile Thr Leu Phe Ser Leu Ser Thr
100 105 110

Leu Pro Asn Thr Leu Val Met Gly Ile Pro Leu Leu Ile Ala Met Tyr
115 120 125

Gly Pro Tyr Ser Gly Ser Leu Met Val Gln Ile Val Val Leu Gln Cys
130 135 140

Ile Ile Trp Tyr Thr Leu Met Leu Phe Leu Phe Glu Phe Arg Ala Ala
145 150 155 160

Arg Met Leu Ile Ala Asp Gln Phe Pro Asp Thr Ala Ala Ser Ile Val

165 170 175

Ser Leu His Val Asp Pro Asp Val Val Ser Leu Glu Gly Gly His Ala
180 185 190

Glu Thr Glu Ala Glu Val Ala Ala Asp Gly Arg Leu His Val Thr Val
195 200 205

Arg Arg Ser Ser Val Ser Arg Arg Ser Leu Leu Val Thr Pro Arg Pro
210 215 220

Ser Asn Leu Thr Gly Ala Glu Ile Tyr Ser Leu Ser Ser Ser Arg Asn
225 230 235 240

Pro Thr Pro Arg Gly Ser Asn Phe Asn His Ala Asp Phe Phe Ala Met
245 250 255

Val Gly Gly Gly Pro Pro Pro Pro Thr Pro Ala Ala Val Arg Gly Ser
260 265 270

Ser Phe Gly Ala Ser Glu Leu Tyr Ser Leu Gln Ser Ser Arg Gly Pro
275 280 285

Thr Pro Arg Gln Ser Asn Phe Asp Glu His Ser Ala Arg Pro Pro Lys
290 295 300

Pro Pro Ala Thr Thr Thr Gly Ala Leu Asn His Asp Ala Lys Glu Leu
305 310 315 320

His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu Val Ser
325 330 335

Gly Leu Pro Val Phe Ser Gly Gly Gly Gly Gly Gly Ala Leu Asp Val
340 345 350

Gly Ala Lys Glu Ile His Met Val Ile Pro Ala Asp Leu Pro Gln Asn
355 360 365

Asn Gly Ser Gly Lys Glu His Glu Glu Tyr Gly Ala Val Ala Leu Gly
370 375 380

Gly Gly Gly Gly Gly Glu Asn Phe Ser Phe Gly Gly Gly Lys Thr Val
385 390 395 400

Asp Gly Ala Glu Ala Val Asp Glu Glu Ala Ala Leu Pro Asp Gly Leu
405 410 415

Thr Lys Met Gly Ser Ser Ser Thr Ala Glu Leu His Pro Lys Val Val
420 425 430

Asp Val Asp Gly Pro Asn Ala Gly Gly Gly Ala Ala Gly Ala Gly Gln
435 440 445

Tyr Gln Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile Leu Ile Met
450 455 460

Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser Ser Leu Leu
465 470 475 480

Gly Leu Ala Trp Ser Leu Val Ala Phe Arg Leu Phe Met Ala Leu Gln
485 490 495

Pro Ser Ile Ile Ala Cys Gly Lys Ser Ala Ala Val Val Ser Met Ala
500 505 510

Val Arg Phe Leu Ala Gly Pro Ala Val Met Ala Ala Ala Ser Ile Ala
515 520 525

Ile Gly Leu Arg Gly Thr Leu Leu His Val Ala Ile Val Gln Ala Ala
530 535 540

Leu Pro Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Val
545 550 555 560

His Pro Ala Ile Leu Ser Thr Ala Val Ile Phe Gly Met Leu Ile Ala
565 570 575

Leu Pro Ile Thr Leu Leu Tyr Tyr Ile Leu Leu Gly Leu
580 585

<210> 21
<211> 1618
<212> DNA
<213> Glycine max

<400> 21
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actctgatgt catgtctctt gacggacgac agcaccctct ggaaaccgat gcccaaatca 120
aagaggacgg caagctccac gtcactgtca gaaaatccaa cgcttccaga tccgacatct 180
tttctagaag gtcccagggc ttctcttcca ccacccctcg cccttccaat ctcaccaatg 240
ctgagattta ctctcttcag tcctctcgaa accctactcc acgtggctcc agtttcaacc 300
acaccgattt ctactccatg atggctgctg gtcgtaattc taactttggt gccaacgatg 360
tttatggcct ttctgcttcc agaggaccaa ctcccagacc ttccaattac gacgaggatg 420
cttctaataa taacaatggg aagccgaggt accactaccc tgctgctgga acaggaacag 480
gaacaggaac aggaacggga acgggaacag ggcactaccc tgctcctaac cctggcatgt 540
tctctcccac tgcttctaaa aacgtcgcca agaagccaga cgatccaaat aaggaccttc 600
atatgttcgt ttggagttca agtgcttccc cggtttcgga tgtgtttggt ggtggacatg 660
aatatgatca taaagaactc aagttaactg tatctccagg aaaagtggag ggtaatatta 720
atagagacac tcaagaggag taccagccag agaaagatga atttagtttt ggaaacagag 780
ggattgagga tgagcatgaa ggtgagaaag ttggaaacgg aaatccaaaa acaatgcctc 840
cagcaagtgt aatgacgagg cttattttga tcatggtgtg gaggaaactt atcagaaacc 900
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<210> 22
<211> 443
<212> PRT
<213> Glycine max

<400> 22
Ile Ser Glu Gln Phe Pro Asp Thr Ala Gly Thr Ile Val Ser Ile His
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Val Asp Ser Asp Val Met Ser Leu Asp Gly Arg Gln His Pro Leu Glu
20 25 30

Thr Asp Ala Gln Ile Lys Glu Asp Gly Lys Leu His Val Thr Val Arg
35 40 45

Lys Ser Asn Ala Ser Arg Ser Asp Ile Phe Ser Arg Arg Ser Gln Gly
50 55 60

Phe Ser Ser Thr Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile
65 70 75 80

Tyr Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe
85 90 95

Asn His Thr Asp Phe Tyr Ser Met Met Ala Ala Gly Arg Asn Ser Asn
100 105 110

Phe Gly Ala Asn Asp Val Tyr Gly Leu Ser Ala Ser Arg Gly Pro Thr
115 120 125

Pro Arg Pro Ser Asn Tyr Asp Glu Asp Ala Ser Asn Asn Asn Asn Gly
130 135 140

Lys Pro Arg Tyr His Tyr Pro Ala Ala Gly Thr Gly Thr Gly Thr Gly
145 150 155 160

Thr Gly Thr Gly Thr Gly Thr Gly His Tyr Pro Ala Pro Asn Pro Gly
165 170 175

Met Phe Ser Pro Thr Ala Ser Lys Asn Val Ala Lys Lys Pro Asp Asp
180 185 190

Pro Asn Lys Asp Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro
195 200 205

Val Ser Asp Val Phe Gly Gly Gly His Glu Tyr Asp His Lys Glu Leu
210 215 220

Lys Leu Thr Val Ser Pro Gly Lys Val Glu Gly Asn Ile Asn Arg Asp
225 230 235 240

Thr Gln Glu Glu Tyr Gln Pro Glu Lys Asp Glu Phe Ser Phe Gly Asn
245 250 255

Arg Gly Ile Glu Asp Glu His Glu Gly Glu Lys Val Gly Asn Gly Asn
260 265 270

Pro Lys Thr Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile Leu Ile
275 280 285

Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser Ser Leu
290 295 300

Ile Gly Leu Thr Trp Ser Leu Ile Ser Phe Arg Trp Asn Val Lys Met
305 310 315 320

Pro Ala Ile Ile Ala Lys Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu
325 330 335

Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Arg
340 345 350

Ile Ile Ala Cys Gly Asn Ser Thr Ala Ala Phe Ser Met Ala Val Arg
355 360 365

Phe Leu Thr Gly Pro Ala Val Met Ala Ala Ala Ser Ile Ala Val Gly
370 375 380

Leu Lys Gly Val Leu Leu His Val Ala Ile Val Gln Ala Ala Leu Pro
385 390 395 400

Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Val His Pro
405 410 415

Asp Ile Leu Ser Thr Gly Val Ile Phe Gly Met Leu Ile Ala Leu Pro
420 425 430

Ile Thr Leu Val Tyr Tyr Ile Leu Leu Gly Leu
435 440

<210> 23
<211> 531
<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (530)
<223> n=a,c,g or t

<400> 23
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gtgagtgaaa gtagtgtcct agcactagta gtacagtaca gaaaactaga agagcaacca 120
aaattttcca attagcacta gtagtacagt acaaaaaact agaagagcaa ccaaaatttt 180
ccaattgaaa aagaaataac aacgagaaca aaatcttatc gtgagatcga ataactgaaa 240
aaaaaggaaa gaagaacaaa aaatgataac gtggaaagac ctatacacgg tcctgaccgc 300
agtggtccct ctctacgtgg cgatgatcct ggcgtacggc tcggtccggt ggtggaaaga 360
tcttctcacc ggaccagtgc tccggcataa accgcttcgt ggcgatcttc gccgtgccgc 420
tcctctcctt ccacttcatc tccaccaaca acccctacgc catgaacttc cgcttcatcc 480
gccgccggac acctccaaga agatcatcat gctcttcgcc cttgcaaccn g 531

<210> 24
<211> 90
<212> PRT
<213> Glycine max

<220>
<221> UNSURE
<222> (33)
<223> Xaa = ANY AMINO ACID

<220>
<221> UNSURE
<222> (78)
<223> Xaa = ANY AMINO ACID

<400> 24
Met Ile Thr Trp Lys Asp Leu Tyr Thr Val Leu Thr Ala Val Val Pro
1 5 10 15

Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Arg Trp Trp Lys
20 25 30

Xaa Ile Phe Ser Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala
35 40 45

Ile Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn
50 55 60

Pro Tyr Ala Met Asn Phe Arg Phe Ile Arg Arg Arg Thr Xaa Thr Ser
65 70 75 80

Lys Lys Ile Ile Met Leu Phe Ala Leu Ala
85 90

<210> 25
<211> 2101
<212> DNA
<213> Glycine max

<400> 25
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a 2101

<210> 26
<211> 540
<212> PRT

<213> Glycine max

<400> 26
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Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Arg Trp Trp Lys
20 25 30

Ile Phe Ser Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Ile
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
50 55 60

Tyr Ala Met Asn Phe Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Ile
65 70 75 80

Ile Met Leu Phe Ala Leu Ala Ile Trp Thr Asn Leu Thr Lys Thr Gly
85 90 95

Ser Leu Glu Trp Met Ile Thr Ile Phe Ser Leu Ser Thr Leu Pro Asn
100 105 110

Thr Leu Val Met Gly Ile Pro Leu Leu Ile Ala Met Tyr Gly Asp Tyr
115 120 125

Ser Gly Ser Leu Met Val Gln Val Val Val Leu Gln Cys Ile Ile Trp
130 135 140

Tyr Thr Leu Leu Leu Phe Leu Phe Glu Tyr Arg Ala Ala Lys Ile Leu
145 150 155 160

Ile Met Glu Gln Phe Pro Glu Thr Ala Ala Ser Ile Val Ser Phe Lys
165 170 175

Val Asp Ser Asp Val Val Ser Leu Asp Gly Arg Asp Phe Leu Glu Thr
180 185 190

Asp Ala Glu Val Gly Asp Asp Gly Lys Leu His Val Thr Val Arg Lys
195 200 205

Ser Asn Ala Ser Arg Arg Ser Phe Met Met Thr Pro Arg Pro Ser Asn
210 215 220

Leu Thr Gly Ala Glu Ile Tyr Ser Leu Ser Ser Ser Arg Asn Pro Thr
225 230 235 240

Pro Arg Gly Ser Asn Phe Asn His Ala Asp Phe Phe Ser Met Met Gly
245 250 255

Tyr Gln Pro Arg His Ser Asn Phe Thr Ala Asn Asp Leu Phe Ser Ser
260 265 270

Arg Gly Pro Thr Pro Arg Pro Ser Asn Phe Glu Glu Pro Ser Met Pro
275 280 285

Gln Ala Val Thr Val Ala Ser Pro Arg Phe Gly Phe Tyr Pro Ser Gln
290 295 300

Thr Val Pro Ala Ser Tyr Pro Pro Pro Asn Pro Asp Phe Ser Ser Ala

305 310 315 320

Thr Lys Asn Leu Lys Asn Gln Ser Gln Asn Gln Asn Pro Asn Gln Ser
325 330 335

Gln Ser Gln Asn Ser Gln Ala Pro Ala Lys Gly Ala His Asp Ala Lys
340 345 350

Glu Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Met Ser Glu
355 360 365

Asn Ala Gly Leu Asn Val Phe Ser Ser Thr Asp Leu Gly Thr Ser Glu
370 375 380

Gln Pro Asp Gln Gly Ala Lys Glu Ile Arg Met Leu Val Ala Asp Asn
385 390 395 400

Asn Ala His Leu Arg Asn Gly Glu Ala Asn Asn Lys Gly Gly Leu Glu
405 410 415

Ala Val Leu Gly Val Glu Asp Phe Lys Phe Leu Val Asn Gly Glu Glu
420 425 430

Gln Val Gly Glu Glu Lys Glu Gly Leu Asn Asn Gly Leu Asn Lys Leu
435 440 445

Gly Ser Ser Ser Thr Val Glu Leu Gln Pro Lys Ala Thr Val Ala Gly
450 455 460

Glu Ala Ser Ala Gly Lys His Met Pro Pro Ala Asn Val Met Thr Arg
465 470 475 480

Leu Ile Leu Ile Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr
485 490 495

Tyr Ser Ser Leu Ile Gly Val Val Trp Ser Leu Val Ala Phe Arg Trp
500 505 510

His Val His Met Pro Lys Ile Ile Glu Lys Ser Ile Ser Ile Leu Ser
515 520 525

Asp Ala Gly Leu Gly Met Ala Met Phe Ser Leu Gly
530 535 540

<210> 27
<211> 525
<212> DNA
<213> Glycine max

<400> 27
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caaaaccaca tgctcttcca catccctata taaaatcttt tcaatcttca taatcatcat 180
catcaccacc aactccaact caaactctcc aaaacctgcc acttcaacct tcctatatat 240
tccttccctc actctcttct gcttctatca tctttctgag aggcttgttg acacacaaaa 300
aatgatcacc ttaacagact tctaccatgt gatgactgca atggtgccac tctatgtggc 360
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<210> 28

<211> 64
<212> PRT
<213> Glycine max

<220>
<221> UNSURE
<222> (38)
<223> Xaa = ANY AMINO ACID

<400> 28
Met Ile Thr Leu Thr Asp Phe Tyr His Val Met Thr Ala Met Val Pro
1   5   10   15

Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Lys
            20   25   30

Ile Phe Ser Pro Asp Xaa Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
        35   40   45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ala Ser Asn Asn Pro
    50   55   60

<210> 29
<211> 2549
<212> DNA
<213> Glycine max

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tcatcatcat caccaccaac tccaactcaa actctccaaa acctgccact tcaaccttcc 240
tatatattcc ttccctcact ctcttctgct tctatcatct ttctgagagg cttgttgaca 300
cacaaaaaat gatcacctta acagacttct accatgtgat gactgcaatg gtgccactct 360
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<210> 30
<211> 605
<212> PRT
<213> Glycine max

<400> 30
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Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Lys
20 25 30

Ile Phe Ser Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ala Ser Asn Asn Pro
50 55 60

Tyr Glu Met Asn Leu Arg Phe Leu Ala Ala Asp Thr Leu Gln Lys Ile
65 70 75 80

Ile Ile Leu Val Leu Leu Ala Val Trp Ser Asn Ile Thr Lys Arg Gly
85 90 95

Cys Leu Glu Trp Ala Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
100 105 110

Thr Leu Val Met Gly Ile Pro Leu Leu Lys Gly Met Tyr Gly Asp Phe
115 120 125

Ser Gly Ser Leu Met Val Gln Ile Val Val Leu Gln Cys Ile Ile Trp
130 135 140

Tyr Thr Leu Met Leu Phe Leu Phe Glu Phe Arg Gly Ala Arg Met Leu
145 150 155 160

Ile Ser Glu Gln Phe Pro Asp Thr Ala Ala Ser Ile Val Ser Ile His
165 170 175

Val Asp Ser Asp Val Met Ser Leu Asp Gly Arg Gln Pro Leu Glu Thr
180 185 190

Glu Ala Glu Ile Lys Glu Asp Gly Lys Leu His Val Thr Val Arg Lys
195 200 205

Ser Asn Ala Ser Arg Ser Asp Ile Phe Ser Arg Arg Ser Gln Gly Leu
210 215 220

Ser Ser Thr Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile Tyr
225 230 235 240

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Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe Asn
                245                 250                 255

His Thr Asp Phe Tyr Ser Met Met Ala Ala Gly Gly Arg Asn Ser Asn
            260                 265                 270

Phe Gly Ala Ser Asp Val Tyr Gly Leu Ser Ala Ser Arg Gly Pro Thr
        275                 280                 285

Pro Arg Pro Ser Asn Tyr Asp Glu Asp Gly Gly Lys Pro Lys Phe His
    290                 295                 300

Tyr His Ala Ala Gly Gly Thr Gly His Tyr Pro Ala Pro Asn Pro Gly
305                 310                 315                 320

Met Phe Ser Pro Ser Asn Gly Ser Lys Ser Val Ala Ala Asn Ala Asn
                325                 330                 335

Ala Lys Arg Pro Asn Gly Gln Ala Gln Leu Lys Pro Glu Asp Gly Asn
            340                 345                 350

Arg Asp Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser
        355                 360                 365

Asp Val Phe Gly Ala His Glu Tyr Gly Gly Gly His Asp Gln Lys Glu
    370                 375                 380

Val Lys Leu Asn Val Ser Pro Gly Lys Val Glu Asn Asn His Arg Asp
385                 390                 395                 400

Thr Gln Glu Asp Tyr Leu Glu Lys Asp Glu Phe Ser Phe Gly Asn Arg
                405                 410                 415

Glu Met Asp Arg Glu Met Asn Gln Leu Glu Gly Glu Lys Val Gly Asp
            420                 425                 430

Gly Lys Pro Lys Thr Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile
        435                 440                 445

Leu Ile Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser
    450                 455                 460

Ser Leu Ile Gly Leu Thr Trp Ser Leu Val Ser Phe Lys Trp Asn Val
465                 470                 475                 480

Glu Met Pro Ala Ile Ile Ala Lys Ser Ile Ser Ile Leu Ser Asp Ala
                485                 490                 495

Gly Leu Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln
            500                 505                 510

Pro Arg Val Ile Ala Cys Gly Asn Ser Thr Ala Ala Phe Ala Met Ala
        515                 520                 525

Val Arg Phe Leu Thr Gly Pro Ala Val Met Ala Ala Ala Ser Ile Ala
    530                 535                 540

Val Gly Leu Lys Gly Val Leu Leu His Val Ala Ile Val Gln Ala Ala
545                 550                 555                 560
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Leu Pro Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Val
565 570 575

His Pro Asp Ile Leu Ser Thr Ala Val Ile Phe Gly Met Leu Ile Ala
580 585 590

Leu Pro Ile Thr Leu Val Tyr Tyr Ile Leu Leu Gly Leu
595 600 605

<210> 31
<211> 419
<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (237)
<223> n=a,c,g or t

<220>
<221> unsure
<222> (250)
<223> n=a,c,g or t

<220>
<221> unsure
<222> (347)
<223> n=a,c,g or t

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ctacattgac ctagctagct acaaaccctg cattaaccat gatcactggt aaggatattt 180
atgatgtttt cgcggctatt gtgcccctct acgttgctat gatattaagc atacggntca 240
gttcggtggn ggaaaatttt cacacctgat caatgttctg gcataaaccg cttcgttgct 300
gtgttcgcag ttccacttct ttctttccac ttcatctcct ccaatgnccc ttatgctatg 360
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<210> 32
<211> 84
<212> PRT
<213> Glycine max

<220>
<221> UNSURE
<222> (25)
<223> Xaa = ANY AMINO ACID

<220>
<221> UNSURE
<222> (32)
<223> Xaa = ANY AMINO ACID

<220>
<221> UNSURE
<222> (64)
<223> Xaa = ANY AMINO ACID

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Met Ile Thr Gly Lys Asp Ile Tyr Asp Val Phe Ala Ala Ile Val Pro
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Leu Tyr Val Ala Met Ile Leu Ser Xaa Tyr Gly Ser Val Arg Trp Xaa
20 25 30

Lys Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala
35 40 45

Val Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Ser Asn Xaa
50 55 60

Pro Tyr Ala Met Asn Tyr His Phe Ile Ala Ala Asp Cys Leu Gln Lys
65 70 75 80

Val Val Ile Leu

<210> 33
<211> 2324
<212> DNA
<213> Glycine max

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tcaagcgggg tggatgaagg gaaatgtaga agatattgga ttttagatgt tagagggaaa 2220
gagaaattat atatagtata cggtagaatg ctatatatat taattattta tgattcatat 2280
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<210> 34
<211> 637
<212> PRT
<213> Glycine max

<400> 34

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Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Arg Trp Trp Lys
            20                  25                  30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Val
        35                  40                  45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Ser Asn Asp Pro
    50                  55                  60

Tyr Ala Met Asn Tyr His Phe Ile Ala Ala Asp Cys Leu Gln Lys Val
65                  70                  75                  80

Val Ile Leu Gly Ala Leu Phe Leu Trp Asn Thr Phe Thr Lys His Gly
                85                  90                  95

Ser Leu Asp Trp Thr Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
            100                 105                 110

Thr Leu Val Met Gly Ile Pro Leu Leu Lys Ala Met Tyr Gly Asp Phe
        115                 120                 125

Ser Gly Ser Leu Met Val Gln Ile Val Val Leu Gln Ser Val Ile Trp
    130                 135                 140

Tyr Thr Leu Met Leu Phe Met Phe Glu Tyr Arg Gly Ala Lys Leu Leu
145                 150                 155                 160

Ile Thr Glu Gln Phe Pro Glu Thr Ala Gly Ser Ile Thr Ser Phe Arg
                165                 170                 175

Val Asp Ser Asp Val Val Ser Leu Asn Gly Arg Glu Pro Leu Gln Thr
            180                 185                 190

Asp Ala Glu Ile Gly Glu Asp Gly Lys Leu His Val Val Val Lys Arg
        195                 200                 205

Ser Ala Ala Ser Ser Met Ile Ser Ser Phe Asn Lys Ser His Leu Thr
    210                 215                 220

Ser Met Thr Pro Arg Ala Ser Asn Leu Thr Gly Val Glu Ile Tyr Ser
225                 230                 235                 240

Val Gln Ser Ser Arg Glu Pro Thr Pro Arg Gly Ser Ser Phe Asn Gln
                245                 250                 255

Thr Asp Phe Tyr Ala Met Phe Ala Ser Lys Ala Pro Ser Pro Lys His
            260                 265                 270

Gly Tyr Thr Asn Ser Phe Gln Ser Asn Asn Gly Gly Ile Gly Asp Val
        275                 280                 285
```

Tyr Ser Leu Gln Ser Ser Lys Gly Ala Thr Pro Arg Thr Ser Asn Phe
290 295 300

Glu Glu Glu Met Leu Lys Met His Lys Lys Arg Gly Gly Arg Ser Met
305 310 315 320

Ser Gly Glu Leu Phe Asn Gly Gly Leu Val Ser Ser Asn Tyr Pro Pro
325 330 335

Pro Asn Pro Met Phe Ser Gly Ser Thr Ser Ala Ala Gly Gly Pro Lys
340 345 350

Lys Lys Asp Ser Ser Gly Gly Gly Gly Ala Val Ala Pro Asn Lys Glu
355 360 365

Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu Gly
370 375 380

Asn Leu Arg His Ala Val Asn Arg Ala Ala Ser Thr Asp Phe Gly Thr
385 390 395 400

Val Asp Pro Ser Lys Ala Val Pro His Glu Thr Val Ala Ser Lys Ala
405 410 415

Val His Glu Leu Ile Glu Asn Met Ser Pro Gly Arg Arg Gly Ser Gly
420 425 430

Glu Arg Glu Pro Glu Met Asp Glu Gly Ala Lys Ile Pro Ala Ser Gly
435 440 445

Ser Pro Tyr Thr Cys Gln Lys Lys Val Asp Met Glu Asp Gly Asn Ala
450 455 460

Asn Lys Asn Gln Gln Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile
465 470 475 480

Leu Ile Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser
485 490 495

Ser Leu Leu Gly Leu Thr Trp Ser Leu Ile Ser Phe Arg Trp His Ile
500 505 510

Glu Met Pro Thr Ile Val Lys Gly Ser Ile Ser Ile Leu Ser Asp Ala
515 520 525

Gly Leu Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln
530 535 540

Pro Lys Ile Ile Ala Cys Gly Lys Ser Val Ala Ala Phe Ser Met Ala
545 550 555 560

Val Arg Phe Leu Thr Gly Pro Ala Val Ile Ala Ala Thr Ser Ile Gly
565 570 575

Ile Gly Leu Arg Gly Val Leu Leu His Val Ala Ile Val Gln Ala Ala
580 585 590

Leu Pro Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Leu
595 600 605

His Ala Asp Ile Leu Ser Thr Ala Val Ile Phe Gly Met Leu Ile Ala

610 615 620

Leu Pro Ile Thr Ile Leu Tyr Tyr Val Leu Leu Gly Val
625 630 635

<210> 35
<211> 473
<212> DNA
<213> Triticum aestivum

<220>
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<221> unsure
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<222> (300)..(301)
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gncatgttca tggcgtacgg gtcggtgcgg tggtggggca tcttcacgcc ggaccantgc 180
tcgggcatca aacgcttcgt ngccgtcttc gcggtggcgc tcctctcctt ccacttcatc 240
tccaccaacg aaccctacgc catggactaa cgcttcctgg gcgccgactc gctgcanaan 300
ntcgttatcc tcgccgncct cgccgtgtgg ganaangtgc tctcccncca acggtgcccn 360
gggggganaga aggcggcgaa ggctcctcnc tgggctggga caacanactc ttctccttgg 420
ggaaagtgcc aaaanactgg ngaaggggaa tccccctgct gggcgcaagt atg 473

<210> 36
<211> 89
<212> PRT
<213> Triticum aestivum

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<222> (10)
<223> Xaa = ANY AMINO ACID

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<222> (12)..(13)
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<222> (78)..(79)..(80)
<223> Xaa = ANY AMINO ACID

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<221> UNSURE
<222> (85)
<223> Xaa = ANY AMINO ACID

<400> 36
Met Ile Thr Gly Lys Asp Ile Tyr His Xaa Leu Xaa Xaa Val Val Pro
1 5 10 15

Leu Tyr Val Xaa Met Phe Met Ala Tyr Gly Ser Val Arg Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Xaa Cys Ser Gly Ile Lys Arg Phe Val Ala Val
35 40 45

Phe Ala Val Ala Leu Leu Ser Phe His Phe Ile Ser Thr Asn Glu Pro
50 55 60

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Tyr Ala Met Asp Xaa Arg Phe Leu Gly Ala Asp Ser Leu Xaa Xaa Xaa
 65                 70                  75                  80

Val Ile Leu Ala Xaa Leu Ala Val Trp
                85

<210> 37
<211> 2293
<212> DNA
<213> Triticum aestivum

<400> 37
ctggatcgat ccccagcagc agagacgaga tcccacgagg aaccgttggg atctagctag 60
ctagctcgtc gcgatgatca ccgggaagga catctacgac gtgctggcgg cggtggtgcc 120
gctgtacgtg gccatgttca tggcgtacgg gtcggtgcgg tggtggggca tcttcacgcc 180
ggaccagtgc tcgggcatca accgcttcgt cgccgtcttc gcggtgccgc tcctctcctt 240
ccacttcatc tccaccaacg accccctacgc catggactac cgcttcctgg ccgccgactc 300
gctgcagaag ctcgtcatcc tcgccgccct cgccgtgtgg cacaacgtgc tctcccgcta 360
ccggtgccgc ggcggcacgg aggccggcga ggcctcgtcg ctggactgga ccatcacgct 420
cttctccctg gcgacgctgc ccaacacgct ggtgatgggc atcccgctgc tgcgcgccat 480
gtacggcgac ttctcggggt cgctcatggt gcagatcgtg gtgctgcaga gcgtcatctg 540
gtacacgctc atgctcttcc tcttcgagta ccgcggcgcc aaggcgctca tctccgagca 600
gttcccgccc gacgtcggcg ccagcatcgc ctccttccgc gtcgactccg acgtcgtctc 660
gctcaacggg cgcgaggcgc tgcacgccga cgccgaggtc ggccgcgacg gccgcgtcca 720
cgtcgtcatc cgccggtccg cgtcggggtc caccacgggc ggccacggcg ccgggcgctc 780
cgggatctac cgtggcgcgt ccaacgccat gacgccgcgc gcgtccaacc tcacgggcgt 840
ggagatctac tcgctgcaga cgtcgcggga gcccacgccg aggcagtcca gcttcaacca 900
gtccgacttc tactccatgt tcaacgggag caagctggct agtcccaagg gccagccccc 960
cgtcgccgga ggtggtggtg cgcgcgggca ggggctcgac gagcaggtgg ccaacaagtt 1020
caagggcggc gaggcggctg cgccctaccc cgcgcccaac cccgggatga tgatgccggc 1080
gccacggaag aaggagcttg gggttccaa ctcaaactcg aacaaggagc tgcacatgtt 1140
cgtgtggagc tccagcgcgt cgcccgtgtc ggaggccaac ctccgcaacg ccgtcaacca 1200
cgccgcgtcc accgacttcg ccgccgcacc gccggcggca gccacgccac gagacggcgc 1260
cacacccaga ggcgtgagcg gcagcgtgac gccggtgatg aagaaggacg ccagcagcgg 1320
cgcggtggag gtggagatcg aggacggcat gatgaagagc ccggcgacgg ggctgggcgc 1380
caagttcccg gtgtcggggt ccccctacgt ggccccgcgg aagaagggcg ccgacgtgcc 1440
tgggctggag gaggcggcgc acccgatgcc gccggcgagc gtgatgaccc ggctcatcct 1500
catcatggtg tggcgcaagc tcatccgcaa ccccaacacc tactccagcc tcatcggcct 1560
cgtctggtca ctcgtctcct tcaggtggaa cattcagatg cctacaataa tcaaggggtc 1620
catatccatc ctgtctgatg cagggctagg gatggctatg ttcagcttag gtctcttcat 1680
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gaggttcttg actgggccgg cggtgatcgc cgcgacctca atcgccgtcg ggctccgggg 1800
agtgctccta catgttgcca ttgtccaggc agcacttcca caaggaattg ttccatttgt 1860
gttcgccaag gagtacaatt gccatcctca aatacttagc acagcggtta tttttggaat 1920
gctcgtggcg ctcccgatca cgatactcta ctacgttctc cttgggatat agattcataa 1980
tcttgaagaa ccaaggctgc aaatcttcgg gtagggagaa gtagaattct agagagaaaa 2040
tggcaactga acatgcttgt gggctgtcct gaagacctga agatgcatga gaccaagcag 2100
aaggataggg agaactaagt aggaccctag acaggaattc aaaggacaga taaagatatc 2160
cttggttcca ttttttaat tttttatatt atttttacta ctgttttaga tccaaagtaa 2220
aggctagggc tttgagtatg aagagttcaa ccgttaaatc gaaaaaaaaa aaaaaaaaaa 2280
aaaaaaaaaa aaa                                                    2293

<210> 38
<211> 632
<212> PRT
<213> Triticum aestivum

<400> 38
Met Ile Thr Gly Lys Asp Ile Tyr Asp Val Leu Ala Ala Val Val Pro
  1               5                  10                  15
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Leu Tyr Val Ala Met Phe Met Ala Tyr Gly Ser Val Arg Trp Trp Gly
            20                  25                  30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Val
        35                  40                  45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asp Pro
    50                  55                  60

Tyr Ala Met Asp Tyr Arg Phe Leu Ala Ala Asp Ser Leu Gln Lys Leu
65                  70                  75                  80

Val Ile Leu Ala Ala Leu Ala Val Trp His Asn Val Leu Ser Arg Tyr
                85                  90                  95

Arg Cys Arg Gly Gly Thr Glu Ala Gly Glu Ala Ser Ser Leu Asp Trp
            100                 105                 110

Thr Ile Thr Leu Phe Ser Leu Ala Thr Leu Pro Asn Thr Leu Val Met
        115                 120                 125

Gly Ile Pro Leu Leu Arg Ala Met Tyr Gly Asp Phe Ser Gly Ser Leu
    130                 135                 140

Met Val Gln Ile Val Val Leu Gln Ser Val Ile Trp Tyr Thr Leu Met
145                 150                 155                 160

Leu Phe Leu Phe Glu Tyr Arg Gly Ala Lys Ala Leu Ile Ser Glu Gln
                165                 170                 175

Phe Pro Pro Asp Val Gly Ala Ser Ile Ala Ser Phe Arg Val Asp Ser
            180                 185                 190

Asp Val Val Ser Leu Asn Gly Arg Glu Ala Leu His Ala Asp Ala Glu
        195                 200                 205

Val Gly Arg Asp Gly Arg Val His Val Val Ile Arg Arg Ser Ala Ser
    210                 215                 220

Gly Ser Thr Thr Gly Gly His Gly Ala Gly Arg Ser Gly Ile Tyr Arg
225                 230                 235                 240

Gly Ala Ser Asn Ala Met Thr Pro Arg Ala Ser Asn Leu Thr Gly Val
                245                 250                 255

Glu Ile Tyr Ser Leu Gln Thr Ser Arg Glu Pro Thr Pro Arg Gln Ser
            260                 265                 270

Ser Phe Asn Gln Ser Asp Phe Tyr Ser Met Phe Asn Gly Ser Lys Leu
        275                 280                 285

Ala Ser Pro Lys Gly Gln Pro Pro Val Ala Gly Gly Gly Gly Ala Arg
    290                 295                 300

Gly Gln Gly Leu Asp Glu Gln Val Ala Asn Lys Phe Lys Gly Gly Glu
305                 310                 315                 320

Ala Ala Ala Pro Tyr Pro Ala Pro Asn Pro Gly Met Met Met Pro Ala
                325                 330                 335

Pro Arg Lys Lys Glu Leu Gly Gly Ser Asn Ser Asn Ser Asp Lys Glu
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340 345 350

Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu Ala
355 360 365

Asn Leu Arg Asn Ala Val Asn His Ala Ala Ser Thr Asp Phe Ala Ala
370 375 380

Ala Pro Pro Ala Ala Ala Thr Pro Arg Asp Gly Ala Thr Pro Arg Gly
385 390 395 400

Val Ser Gly Ser Val Thr Pro Val Met Lys Lys Asp Ala Ser Ser Gly
405 410 415

Ala Val Glu Val Glu Ile Glu Asp Gly Met Met Lys Ser Pro Ala Thr
420 425 430

Gly Leu Gly Ala Lys Phe Pro Val Ser Gly Ser Pro Tyr Val Ala Pro
435 440 445

Arg Lys Lys Gly Ala Asp Val Pro Gly Leu Glu Glu Ala Ala His Pro
450 455 460

Met Pro Pro Ala Ser Val Met Thr Arg Leu Ile Leu Ile Met Val Trp
465 470 475 480

Arg Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser Ser Leu Ile Gly Leu
485 490 495

Val Trp Ser Leu Val Ser Phe Arg Trp Asn Ile Gln Met Pro Thr Ile
500 505 510

Ile Lys Gly Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu Gly Met Ala
515 520 525

Met Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Lys Ile Ile Ser
530 535 540

Cys Gly Lys Ser Val Ala Thr Phe Ala Met Ala Val Arg Phe Leu Thr
545 550 555 560

Gly Pro Ala Val Ile Ala Ala Thr Ser Ile Ala Val Gly Leu Arg Gly
565 570 575

Val Leu Leu His Val Ala Ile Val Gln Ala Ala Leu Pro Gln Gly Ile
580 585 590

Val Pro Phe Val Phe Ala Lys Glu Tyr Asn Cys His Pro Gln Ile Leu
595 600 605

Ser Thr Ala Val Ile Phe Gly Met Leu Val Ala Leu Pro Ile Thr Ile
610 615 620

Leu Tyr Tyr Val Leu Leu Gly Ile
625 630

<210> 39
<211> 447
<212> DNA
<213> Triticum aestivum

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<222> (390)
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<222> (421)
<223> n=a,c,g or t

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<222> (434)
<223> n=a,c,g or t

<400> 39
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aaggtggtgg aggcgatggc gccgctttac ttcgcgctag ggctcgggta cgggtccgtt 120
cgatggtggc ggttcttcac ggcggagcag tgcggcgcca tcaacacgct ggtggtctgc 180
ttctccatgc ccttcttcac cttcgacttc gtggtccgcg ccgaccccta cgccatgaat 240
taccgcgtca tcgccgccga cgccgtcgcc aaacttctcg ccgtgctcgc cgcggccgtc 300
tgggcgcgct gcgccaaggc caaggccggc gcctactcgt ggtcatcacg ggttctccc 360
tgggcncgta caacaacacn ctcgtcgtcn gggtgccgct tctgggacgc caatttcngg 420
naattggggg gcanggactt tattttt                                    447
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<210> 40
<211> 94
<212> PRT
<213> Triticum aestivum

<400> 40
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Met Ile Ala Leu Gly Asp Ile Tyr Lys Val Val Glu Ala Met Ala Pro
1               5                   10                  15

Leu Tyr Phe Ala Leu Gly Leu Gly Tyr Gly Ser Val Arg Trp Trp Arg
            20                  25                  30

Phe Phe Thr Ala Glu Gln Cys Gly Ala Ile Asn Thr Leu Val Val Cys
        35                  40                  45

Phe Ser Met Pro Phe Phe Thr Phe Asp Phe Val Val Arg Ala Asp Pro
    50                  55                  60

Tyr Ala Met Asn Tyr Arg Val Ile Ala Ala Asp Ala Val Ala Lys Leu
65                  70                  75                  80
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Leu Ala Val Leu Ala Ala Ala Val Trp Ala Arg Cys Ala Lys
85 90

<210> 41
<211> 415
<212> DNA
<213> Triticum aestivum

<400> 41
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tcgcccgcag agtgagccga ggccgagagc cggagcgcga gaggaagaag cagaggaggt 120
cgggcaagat gatcacgggc acggacttct accacgtgat gacggcggtg gtgccgctgt 180
acgtggccat gatcctcgcc tacggctccg tcaagtggtg ggcatcttc acgccggacc 240
agtgctccgg gatcaaccgc ttcgtcgcgc tcttcgccgt gccgctcctc tccttccact 300
tcatctccac caacaacccc tacaccatga acctgcgctt catcgccgcc gacacgctgc 360
agaagctcat gatgctcgcc atgctcaacg cctggagcaa ctctcccgcc gcggc 415

<210> 42
<211> 91
<212> PRT
<213> Triticum aestivum

<400> 42
Met Ile Thr Gly Thr Asp Phe Tyr His Val Met Thr Ala Val Val Pro
1 5 10 15

Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
50 55 60

Tyr Thr Met Asn Leu Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Leu
65 70 75 80

Met Met Leu Ala Met Leu Asn Ala Trp Ser Asn
85 90

<210> 43
<211> 647
<212> PRT
<213> Arabidopsis thaliana

<400> 43
Met Ile Thr Gly Lys Asp Met Tyr Asp Val Leu Ala Ala Met Val Pro
1 5 10 15

Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Arg Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Val
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Ser Asn Asp Pro
50 55 60

Tyr Ala Met Asn Tyr His Phe Leu Ala Ala Asp Ser Leu Gln Lys Val
65 70 75 80

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Val Ile Leu Ala Ala Leu Phe Leu Trp Gln Ala Phe Ser Arg Arg Gly
                85                  90                  95

Ser Leu Glu Trp Met Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
            100                 105                 110

Thr Leu Val Met Gly Ile Pro Leu Leu Arg Ala Met Tyr Gly Asp Phe
        115                 120                 125

Ser Gly Asn Leu Met Val Gln Ile Val Val Leu Gln Ser Ile Ile Trp
    130                 135                 140

Tyr Thr Leu Met Leu Phe Leu Phe Glu Phe Arg Gly Ala Lys Leu Leu
145                 150                 155                 160

Ile Ser Glu Gln Phe Pro Glu Thr Ala Gly Ser Ile Thr Ser Phe Arg
                165                 170                 175

Val Asp Ser Asp Val Ile Ser Leu Asn Gly Arg Glu Pro Leu Gln Thr
            180                 185                 190

Asp Ala Glu Ile Gly Asp Asp Gly Lys Leu His Val Val Val Arg Arg
        195                 200                 205

Ser Ser Ala Ala Ser Ser Met Ile Ser Ser Phe Asn Lys Ser His Gly
    210                 215                 220

Gly Gly Leu Asn Ser Ser Met Ile Thr Pro Arg Ala Ser Asn Leu Thr
225                 230                 235                 240

Gly Val Glu Ile Tyr Ser Val Gln Ser Ser Arg Glu Pro Thr Pro Arg
                245                 250                 255

Ala Ser Ser Phe Asn Gln Thr Asp Phe Tyr Ala Met Phe Asn Ala Ser
            260                 265                 270

Lys Ala Pro Ser Pro Arg His Gly Tyr Thr Asn Ser Tyr Gly Gly Ala
        275                 280                 285

Gly Ala Gly Pro Gly Gly Asp Val Tyr Ser Leu Gln Ser Ser Lys Gly
    290                 295                 300

Val Thr Pro Arg Thr Ser Asn Phe Asp Glu Glu Val Met Lys Thr Ala
305                 310                 315                 320

Lys Lys Ala Gly Arg Gly Gly Arg Ser Met Ser Gly Glu Leu Tyr Asn
                325                 330                 335

Asn Asn Ser Val Pro Ser Tyr Pro Pro Pro Asn Pro Met Phe Thr Gly
            340                 345                 350

Ser Thr Ser Gly Ala Ser Gly Val Lys Lys Lys Glu Ser Gly Gly Gly
        355                 360                 365

Gly Ser Gly Gly Gly Val Gly Val Gly Gly Gln Asn Lys Glu Met Asn
    370                 375                 380

Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Glu Ala Asn Ala
385                 390                 395                 400
```

Lys Asn Ala Met Thr Arg Gly Ser Ser Thr Asp Val Ser Thr Asp Pro
405 410 415

Lys Val Ser Ile Pro Pro His Asp Asn Leu Ala Thr Lys Ala Met Gln
420 425 430

Asn Leu Ile Glu Asn Met Ser Pro Gly Arg Lys Gly His Val Glu Met
435 440 445

Asp Gln Asp Gly Asn Asn Gly Gly Lys Ser Pro Tyr Met Gly Lys Lys
450 455 460

Gly Ser Asp Val Glu Asp Gly Gly Pro Gly Pro Arg Lys Gln Gln Met
465 470 475 480

Pro Pro Ala Ser Val Met Thr Arg Leu Ile Leu Ile Met Val Trp Arg
485 490 495

Lys Leu Ile Arg Asn Pro Asn Thr Tyr Ser Ser Leu Phe Gly Leu Ala
500 505 510

Trp Ser Leu Val Ser Phe Lys Trp Asn Ile Lys Met Pro Thr Ile Met
515 520 525

Ser Gly Ser Ile Ser Ile Leu Ser Asp Ala Gly Leu Gly Met Ala Met
530 535 540

Phe Ser Leu Gly Leu Phe Met Ala Leu Gln Pro Lys Ile Ile Ala Cys
545 550 555 560

Gly Lys Ser Val Ala Gly Phe Ala Met Ala Val Arg Phe Leu Thr Gly
565 570 575

Pro Ala Val Ile Ala Ala Thr Ser Ile Ala Ile Gly Ile Arg Gly Asp
580 585 590

Leu Leu His Ile Ala Ile Val Gln Ala Ala Leu Pro Gln Gly Ile Val
595 600 605

Pro Phe Val Phe Ala Lys Glu Tyr Asn Val His Pro Asp Ile Leu Ser
610 615 620

Thr Ala Val Ile Phe Gly Met Leu Val Ala Leu Pro Val Thr Val Leu
625 630 635 640

Tyr Tyr Val Leu Leu Gly Leu
645

<210> 44
<211> 622
<212> PRT
<213> Arabidopsis thaliana

<400> 44
Met Ile Thr Ala Ala Asp Phe Tyr His Val Met Thr Ala Met Val Pro
1 5 10 15

Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Lys
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu

1007 884.102501

35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ala Ala Asn Asn Pro
50 55 60

Tyr Ala Met Asn Leu Arg Phe Leu Ala Ala Asp Ser Leu Gln Lys Val
65 70 75 80

Ile Val Leu Ser Leu Leu Phe Leu Trp Cys Lys Leu Ser Arg Asn Gly
85 90 95

Ser Leu Asp Trp Thr Ile Thr Leu Phe Ser Leu Ser Thr Leu Pro Asn
100 105 110

Thr Leu Val Met Gly Ile Pro Leu Leu Lys Gly Met Tyr Gly Asn Phe
115 120 125

Ser Gly Asp Leu Met Val Gln Ile Val Val Leu Gln Cys Ile Ile Trp
130 135 140

Tyr Ile Leu Met Leu Phe Leu Phe Glu Tyr Arg Gly Ala Lys Leu Leu
145 150 155 160

Ile Ser Glu Gln Phe Pro Asp Thr Ala Gly Ser Ile Val Ser Ile His
165 170 175

Val Asp Ser Asp Ile Met Ser Leu Asp Gly Arg Gln Pro Leu Glu Thr
180 185 190

Glu Ala Glu Ile Lys Glu Asp Gly Lys Leu His Val Thr Val Arg Arg
195 200 205

Ser Asn Ala Ser Arg Ser Asp Ile Tyr Ser Arg Arg Ser Gln Gly Leu
210 215 220

Ser Ala Thr Pro Arg Pro Ser Asn Leu Thr Asn Ala Glu Ile Tyr Ser
225 230 235 240

Leu Gln Ser Ser Arg Asn Pro Thr Pro Arg Gly Ser Ser Phe Asn His
245 250 255

Thr Asp Phe Tyr Ser Met Met Ala Ser Gly Gly Gly Arg Asn Ser Asn
260 265 270

Phe Gly Pro Gly Glu Ala Val Phe Gly Ser Lys Gly Pro Thr Pro Arg
275 280 285

Pro Ser Asn Tyr Glu Glu Asp Gly Gly Pro Ala Lys Pro Thr Ala Ala
290 295 300

Gly Thr Ala Ala Gly Ala Gly Arg Phe His Tyr Gln Ser Gly Gly Ser
305 310 315 320

Gly Gly Gly Gly Gly Ala His Tyr Pro Ala Pro Asn Pro Gly Met Phe
325 330 335

Ser Pro Asn Thr Gly Gly Gly Gly Gly Thr Ala Ala Lys Gly Asn Ala
340 345 350

Pro Val Val Gly Gly Lys Arg Gln Asp Gly Asn Gly Arg Asp Leu His
355 360 365

Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val Ser Asp Val Phe Gly
370 375 380

Gly Gly Gly Gly Asn His His Ala Asp Tyr Ser Thr Ala Thr Asn Asp
385 390 395 400

His Gln Lys Asp Val Lys Ile Ser Val Pro Gln Gly Asn Ser Asn Asp
405 410 415

Asn Gln Tyr Val Glu Arg Glu Glu Phe Ser Phe Gly Asn Lys Asp Asp
420 425 430

Asp Ser Lys Val Leu Ala Thr Asp Gly Gly Asn Asn Ile Ser Asn Lys
435 440 445

Thr Thr Gln Ala Lys Val Met Pro Pro Thr Ser Val Met Thr Arg Leu
450 455 460

Ile Leu Ile Met Val Trp Arg Lys Leu Ile Arg Asn Pro Asn Ser Tyr
465 470 475 480

Ser Ser Leu Phe Gly Ile Thr Trp Ser Leu Ile Ser Phe Lys Trp Asn
485 490 495

Ile Glu Met Pro Ala Leu Ile Ala Lys Ser Ile Ser Ile Leu Ser Asp
500 505 510

Ala Gly Leu Gly Met Ala Met Phe Ser Leu Gly Leu Phe Met Ala Leu
515 520 525

Asn Pro Arg Ile Ile Ala Cys Gly Asn Arg Arg Ala Ala Phe Ala Ala
530 535 540

Ala Met Arg Phe Val Val Gly Pro Ala Val Met Leu Val Ala Ser Tyr
545 550 555 560

Ala Val Gly Leu Arg Gly Val Leu Leu His Val Ala Ile Ile Gln Ala
565 570 575

Ala Leu Pro Gln Gly Ile Val Pro Phe Val Phe Ala Lys Glu Tyr Asn
580 585 590

Val His Pro Asp Ile Leu Ser Thr Ala Val Ile Phe Gly Met Leu Ile
595 600 605

Ala Leu Pro Ile Thr Leu Leu Tyr Tyr Ile Leu Leu Gly Leu
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<211> 425
<212> DNA
<213> Triticum aestivum

<400> 45
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ccggaccagt gctccgggat caaccgcttc gtcgcgctct tcgccgtgcc gctcctctcc 300
ttccacttca tctccaccaa caacccctac accatgaacc tgcgcttcat cgccgccgac 360

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ggcag 425

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<213> Triticum aestivum

<400> 46
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Leu Tyr Val Ala Met Ile Leu Ala Tyr Gly Ser Val Lys Trp Trp Gly
20 25 30

Ile Phe Thr Pro Asp Gln Cys Ser Gly Ile Asn Arg Phe Val Ala Leu
35 40 45

Phe Ala Val Pro Leu Leu Ser Phe His Phe Ile Ser Thr Asn Asn Pro
50 55 60

Tyr Thr Met Asn Leu Arg Phe Ile Ala Ala Asp Thr Leu Gln Lys Leu
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Met Met Leu Ala Met Leu Thr Ala Trp Ser His Leu Ser Arg Arg Gly
85 90 95

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<211> 855
<212> DNA
<213> Zea mays

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gccgagtaca acgac 855

<210> 48
<211> 285
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<400> 48
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Leu Ser Arg Arg Gly Cys Leu Glu Trp Thr Ile Thr Leu Phe Ser Leu
20 25 30

Ser Thr Leu Pro Asn Thr Leu Val Met Gly Ile Pro Leu Leu Lys Gly
35 40 45

Met Tyr Gly Asp Phe Ser Gly Ser Leu Met Val Gln Ile Val Val Leu
50 55 60

Gln Cys Ile Ile Trp Tyr Thr Leu Met Leu Phe Met Phe Glu Tyr Arg
65 70 75 80

Gly Ala Arg Ile Leu Ile Thr Glu Gln Phe Pro Asp Thr Ala Gly Ala
85 90 95

Ile Ala Ser Ile Val Val Asp Pro Asp Val Val Ser Leu Asp Gly Arg
100 105 110

Asn Asp Ala Ile Glu Thr Glu Ala Glu Val Lys Glu Asp Gly Lys Ile
115 120 125

His Val Thr Val Arg Arg Ser Asn Ala Ser Arg Ser Asp Ile Tyr Ser
130 135 140

Arg Arg Ser Met Gly Phe Ser Ser Thr Thr Pro Arg Pro Ser Asn Leu
145 150 155 160

Thr Asn Ala Glu Ile Tyr Ser Leu Gln Ser Ser Arg Asn Pro Thr Pro
165 170 175

Arg Gly Ser Ser Phe Asn His Thr Asp Phe Tyr Ser Met Val Gly Arg
180 185 190

Ser Ser Asn Phe Ala Ala Gly Asp Ala Phe Gly Leu Arg Thr Gly Ala
195 200 205

Thr Pro Arg Pro Ser Asn Tyr Glu Glu Asp Pro Gln Gly Lys Ala Asn
210 215 220

Lys Tyr Gly Gln Tyr Pro Ala Pro Asn Pro Ala Met Ala Ala Gln Pro
225 230 235 240

Ala Lys Gly Leu Lys Lys Ala Ala Asn Gly Gln Ala Lys Gly Glu Asp
245 250 255

Gly Lys Asp Leu His Met Phe Val Trp Ser Ser Ser Ala Ser Pro Val
260 265 270

Ser Asp Val Phe Gly Asn Gly Ala Ala Glu Tyr Asn Asp
275 280 285